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S/582/60/000/003/005/009
D234/D305

AUTHORS: Tsetlin, M.L., and Shekhtman, L.M. (Moscow)

TITLE: On ferrotransistor push-pull circuits with non-periodical reading

SOURCE: Problemy kibernetiki, no. 3, Moscow, 1960, 89 - 94

TEXT: The paper supplements an earlier one (Ref. 1: Problemy kibernetiki, no. 2, 1959) and uses the same terminology and notations. The authors deduce the logical equation of the operation of the element used for non-periodical reading. The following method is stated to be possible for the synthesis of non-primitive circuits with non-periodical reading: Formulation of the logical equations of the circuit, their reduction to a form appropriate for finding the logical functions X, Y, Z for each element with non-periodical reading, and reduction of these functions to a g-form, whose realization determines the structure of the circuit. The maximum number of cores with non-periodical reading is determined by the number of feedbacks of the circuit. Several examples of the synthesis of such

Card 1/2

✓B

On ferrotransistor push-pull ...

S/582/60/000/003/005/009
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circuits are given. There are 5 figures and 3 references: 2 Soviet bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Guterman, Kodis, Ruhman, IRE National Convention Record, vol. 2, 1954, Part 4, 124-132.

SUBMITTED: November 3, 1957

✓B

Card 2/2

GORLOVSKIY, B.L., inzh.; SHEKHTMAN, L.M., inzh.

Causes of the flooding of the galleries of thermal electric
power plants. Elek. sta. 35 no. 4:36-40 Ap '64.

(MIRA 17:7)

SUPRUNOV, A., inzh.; SHEKHTMAN, M., inzh.

Production of quality polished hominy at the Kharkov Milling
Combine No.2. Muk.-elev.prom. 25 no.2:18-19 F '59.
(MIRA 12:4)

1. Khar'kovskoye oblastnoye upravleniye khleboproduktov (for
Suprunov). 2. Khar'kovskiy mel'nichnyy kombinat No.2 (for
Shekhtman).

(Corn milling)

SHEKHTMAN, M.G.

Doc. No. 100

PHASE I BOOK EXPLOITATION

304/1366

8(3)

p. 1

Moscow. Nauchno-issledovatel'skiy institut postoyannogo toka

Peredacha energii postoyannym i peremennym tokom (Power Transmission by Direct and Alternating Current) Moscow, Gosenergoizdat, 1958. 334 p. (Series: Itogi nauki i tekhn., sb. 3) 3,350 copies printed.

Ed.: Pintsov, A.M.; Tech. Ed.: Voronetskaya, L.V.; Editorial Board: Shchedrin, N.B., Doctor of Technical Sciences, Corresponding Member, Uzbek SSR Academy of Sciences, Professor (Chief Ed.); Gertsik, A.K., Engineer; Tsel'myanov, V.I., Candidate of Technical Sciences; Pimenov, V.P., Candidate of Technical Sciences; Pintsov, A.M., Candidate of Technical Sciences; Pozin, A.V., Candidate of Technical Sciences; Sene, L.A., Doctor of Physical and Mathematical Sciences, Professor; Sonin, M.R., Engineer; Shekhtman, M.G., Candidate of Technical Sciences.

PURPOSE: This collection of articles, issued by the USSR Ministry of Electric Power Stations, is intended for scientists, engineers and designers of high-voltage overhead transmission lines.

Card 1/13

Shekhtman, M.G. and N.A. Shipilova. Parameters of Equipment of Converter Substations in the Kashira-Moscow D-C Transmission Line 129
Firing of mercury rectifiers causes current oscillations in a tens and hundreds kc/sec frequency range. Study of this source of radio interference requires exact knowledge of equipment parameters for frequencies up to 1 Mc. The authors describe methods of measuring parameters and discuss the results obtained in the experimental Kashira-Moscow d-c transmission line. The three data tables are recommended for practical use for those working in radio interference sup-
port. 5 diagrams and no references.

Doc. No. 100

8(3)

PHASE I BOOK EXPLOITATION

SOV/1986

Moscow. Nauchno-issledovatel'skiy institut postoyannogo toka

Peredacha energii postoyannym i peremennym tokom (Power Transmission by Direct and Alternating Current) Moscow, Gosenergoizdat, 1958. 334 p. (Series: Its: Izvestiya, sb. 3) 5,550 copies printed.

Ed.: Pintsav, A.M.; Tech. Ed.: Voronetskaya, L.V.; Editorial Board: Shchedrin, N.S., Doctor of Technical Sciences, Corresponding Member, Uzbek SSR Academy of Sciences, Professor (Chief Ed.); Gertsik, A.K., Engineer; Temel'yanov, V.I., Candidate of Technical Sciences; Pinnov, V.P., Candidate of Technical Sciences; Pintsav, A.K., Candidate of Technical Sciences; Pozin, A.V., Candidate of Technical Sciences; Sen, L.A., Doctor of Physical and Mathematical Sciences, Professor; Sosin, N.B., Engineer; Shchitina, M.G., Candidate of Technical Sciences.

PURPOSE: This collection of articles, issued by the USSR Ministry of Electric Power Stations, is intended for scientists, engineers and designers of high-voltage overhead transmission lines.

Card 1/13

Shchitina, M.G. Damping of Plate Voltage Oscillations After Extinction of Mercury Rectifiers in Conversion Substations 143
Experimental investigation was carried out by NIIEP in the Kazhira-Moscow d-c transmission line on damping of voltage oscillations caused by extinction of one or more mercury rectifiers in substations. The author describes this investigation and discusses the results. He also explains Engineer V.A. Morshyevskiy's method of calculating the parameters of damping circuits, especially of power transformers. There are 3 tables, 3 diagrams, 1 appendix and no references.

8(5)

PHASE I BOOK EXPLOITATION

SOV/1966

Moscow. Nauchno-issledovatel'skiy institut postoyannogo toka

Peredacha energii postoyannym i peremennym tokom (Power Transmission by Direct and Alternating Current) Moscow, Gosenergoizdat, 1958. 354 p. (Series: It's Izvestiya, sb. 3) 3,550 copies printed.

Ed.: Pintsov, A.M.; Tech. Ed.: Voronetskaya, L.V.; Editorial Board: Shchedrin, N.N., Doctor of Technical Sciences, Corresponding Member, Uzbek SSR Academy of Sciences, Professor (Chief Ed.); Gertsik, A.K., Engineer; Yemil'yanov, V.I., Candidate of Technical Sciences; Plesnov, V.P., Candidate of Technical Sciences; Pintsov, A.K., Candidate of Technical Sciences; Plesov, A.V., Candidate of Technical Sciences; Smol, L.A., Doctor of Physical and Mathematical Sciences, Professor; Smol, N.R., Engineer; Shkhtman, M.G., Candidate of Technical Sciences.

PURPOSE: This collection of articles, issued by the USSR Ministry of Electric Power Stations, is intended for scientists, engineers and designers of high-voltage overhead transmission lines.

Card 1/13

Shkhtman, M.G. Electromagnetic Power of a Synchronous Machine Operating with a Rectifier as a Load

225

The author explains the theory of synchronous machines operating at full power against mercury rectifiers, and discusses the conditions of operation of synchronous machines from the point of view of their electromagnetic power. There are two diagrams and no references.

SHEKHMAN, M.G.; SHIPULINA, N.A.

Parameters of the equipment of converting substations in the
Kashira-Moscow d.c. power line. Izv.NIIPT no.3:129-142 '58.
(MIRA 12:1)

(Electric substations) (Electric measurements)

SHEKHTMAN, M.G.

Damping the anode-voltage oscillations after the extinction of
the converters. Izv.NIIPT no.3:143-160 '58. (MIRA 12:1)
(Electric power distribution--Direct current) (Oscillations)

SHEKHTMAN, M.G.

Electromagnetic power of a synchronous machine supplying a
rectifier. Izv.NIIPT no.3:225-233 '58. (MIRA 12:1)
(Electric machinery, Synchronous)

AUTHORS: Shekhtman, B.G., Candidate of Technical Sciences, 105-56-5-20/26
Aksel'rod, M.M., Engineer, Butayev, F.I., Candidate
of Technical Sciences, Klimov, N.S., Candidate of
Technical Sciences, Levitskiy, K.K., Engineer

TITLE: On the Prospects of Employing D.C. Transmission in the USSR
(O perspektivakh primeneniya elektroperech postoyannogo toka
v Sovetskom Soyuze)

PERIODICAL: Elektrichestvo, 1958, Nr 5, pp. 81-83 (USSR)

ABSTRACT: Comments on the article by N.M.Mel'gunov, Elektrichestvo, 1957,
Nr 2:
1.) This is a comment on the article by I.F.Polovoy in
Elektrichestvo, 1957, Nr 5. A number of errors is criticized. The
ratio between the costs of an A.C. substation and a D.C. sub-
station are assumed by Polovoy as amounting to 0.5. According to
data published by Teploelektroproyekt it is 0.557-0.580 and ac-
cording to those given by the Institute for Direct Current it is
0.76 (taking account of the fact that valves are produced in the
factory). Doubts expressed with respect to the possibility of

Card 1/3

On the Prospects of Employing D.C. Transmission
in the USSR

105-56-5-20/26

covering reactive (idle) power are unfounded because the rectifier plant has a $\cos \varphi = 0.90 - 0.95$. Polovoy does not take power losses in compensation devices into account. He assumes the specific costs of the transformer plant of D.C. substations to amount to 36% of the substation costs. According to Teploelektroproyekt they amount to 26%, and according to the Institute for Direct Current and the All-Union Institute for Electrical Engineering - 17%. According to experience gathered in connection with the line Kashira hydraulic station - Moscow, and according to technical conditions the life of valves between two repairs amounts to 15 000 hours or two years and not one year.

2.) Criticism of the article by Mel'gunov. It is wrong to declare that the costs of D.C. - and A.C. substations including devices for the increase of stability are the same already at the present stage of transformer-engineering, that in the case of long-distance transmission no intermediate output is necessary, that by means of the mercury valve grids the intermediate substations can be reliably disconnected from the long distance line. Advantages and disadvantages of a D.C. line are enumerated.

Card 2/3

On the Prospects of Employing D.C. Transmission
in the USSR

105-58-5-20/28

The atomic electric power plants will only supplement existing power systems, and hydraulic power still remains the most inexpensive type of energy. The large valves for 150 kV and 300 A developed at the All-Union Institute for Electric Engineering will render D.C. transmission more economical. For high power transmissions of from 0.75 to 6 million kW over distances of 900 km and more direct current offers great advantages.

ASSOCIATION:

There is 1 table.
Nauchno-issledovatel'skiy institut postoyannogo toka (Scientific Research Institute for Direct Current)
Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina (All-Union Institute for Electric Engineering imeni Lenin)
Teploelektroproyekt

AVAILABLE:

Library of Congress

Card 3/3

1. Direct currents--Transmission--USSR
2. Electric power plants
- Substations--Effectiveness
3. Atomic power plants--Applications
4. Power plants--Economic aspects

SHEKHTMAN, M.G.

Operating conditions and external characteristics of a 12-phase
cascaded bridge-circuit converter network. Izv. NIPT no.5:23-63
'60. (MIRA 14:1)

(Electric current converters)
(Bridge circuits)

VORONKOV, G.L.; SHEKHTMAN, M.L.

Tele-electrocardiographic study of an electrospasmodic seizure.
Zhur. nevr. i psikh. 64 no. 12:1845-1851 '64. (MIRA 13:1)

1. Kafedra psikhiatrii (zaveduyushchiy - prof. Ya. P. Frumkin)
Kiyevskogo obshchego Trudovogo Krasnogo Znameni meditsinskogo
instituta im. Bogomol'tsa i Kiyevskaya gorodskaya klinicheskaya
psikhonevrologicheskaya bol'nitsa im. Pavlova (glavnyy vrach
P.N. Lopekhov).

SHEKHTMAN, M.L.

Electrocardiogram in elderly and senile mental patients under
treatment with methyldiazil. Vrach. delo no.12:108-110 D '61.
(MIRA 15:1)

1. Kiyevskaya gorodskaya klinicheskaya psikhonevrologicheskaya
bol'nitsa im. akademika I.P.Pavlova. Nauchnyy rukovoditel' -
prof. I.A.Polishuk.

(MENTAL ILLNESS) (ANTISPASMODICS)
(ELECTROCARDIOGRAPHY)

SHEKHTMAN, M.M.

Cardiac lesions in leukemia. Probl.gemat.i perel.krovi 6 no.4:
47-51 Ap '61. (MIRA 14:6)

1. Iz Gospital'noy i propedevticheskoy terapevticheskoy kliniki
(zav. - deystvitel'nyy chlen AMN SSSR prof. Ye.M. Tareyev)
sanitarno-gigiyenicheskogo fakul'teta I Moskovskogo ordena Lenina
meditsinskogo instituta i 24-y gorodskoy klinicheskoy bol'nitsy
(glavnyy vrach V.P. Uspenskiy).
(LEUKEMIA) (HEART—DISEASES)

VANINA, L.V., dotsent; MALKOVA, M.N., kand.med.nauk; SHEKHTMAN, M.M.

Pregnancy and labor in women with an atrioventricular conduction disorder Kardiologiya 2 no.5:65-68 S-O '62. (MIRA 15:12)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. K.N. Zhmakin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova i Instituta akusherstva i ginekologii (dir. - prof. O.V.Makeyeva) Ministerstva zdravookhraneniya RSFSR.
(HEART BLOCK) (PREGNANCY, COMPLICATIONS OF)
(LABOR, COMPLICATED)

FEDERMESSER, K.M.; SHEKHTMAN M.M.

Adrenal gland insufficiency following cesarean section. Akush.
i gin. 39 no.5:152-153 S-0 '63. (MIRA 17:8)

1. Iz Instituta akusherstva i ginekologii (dir. -- prof. O.V.
Makeyeva) Ministerstva zdravookhraneniya SSSR.

SHEKHTMAN, M.M.

Changes in the ECG following mitral commissurotomy in pregnancy.
Sov. med. 27 no.8:112-116 Ag '64. (MIRA 18:3)

1. Nauchno-issledovatel'skiy institut akusherstva i ginekologii
(dir.- prof. O.V. Makeyeva) Ministerstva zdravookhraneniya SSSR
i terapevticheskaya klinika (zav.- deystvitel'nyy chlen AMN SSSR
prof. Ye.M. Tareyev) sanitarno-gigiyenicheskogo fakul'teta I
Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

SHEKHTMAN, M.M.

Characteristics of the phonocardiogram of pregnant women
after mitral commissurotomy. Azerb. med. zhur. 42 no.8:3-9
Ag '65. (MIRA 18:11)

1. Iz Instituta akusherstva i ginekologii (dir. - prof.
O.V. Makeyeva) Ministerstva zdavookhraneniya SSSR i kliniki
propedevticheskoy i professional'noy terapii (zav. - deyst-
vitel'nyy chlen AMN SSSR, prof Ye.M. Tareyev) sanitarno-
gigiyenicheskogo fakul'teta 1-go Moskovskogo ordena Lenina
meditsinskogo instituta imeni Sechenova.

KOROLEV, A.V.; SHEKHTMAN, N.A.; GOTMAN, Ya.D., redaktor; POYARKOV, V.E.,
redaktor; POPOV, N.D., tekhnicheskiiy redaktor

[Postmagmatic ore bodies and methods for their geological analysis]
Poslemagmaticheskie rudnye tela i metody ikh geologicheskogo ana-
liza. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geologii i okhra-
ne neдр, 1954. 113 p. (MLRA 8:7)
(Geology, Structural) (Ore deposits)

MARGOLIN, E.I., kapitan med. sluzhby; SHEKHMAN, H.M., mayor med. sluzhby

Organization and methods for rendering self and mutual aid to
troops in minor injury cases. Voen.-med. zhur no.5:91 My '57 (MIRA 12:7)
(WAR--RELIEF OF SICK AND WOUNDED)

FILIPCHIK, V.I., SHEKHTMAN, N.M. (Minsk)

Successful vitamin B₁₂ therapy in Darier's erythema annulare centrifugum
Vest.derm. i ven. 32 no.3:82-83 My-Je '58 (MIRA 11:7)
(ERYTHEMA)
(CYANOCOBALAMINE)

MARGOLIN, E.I., kapitan meditsinskoy sluzhby; SHEKHTMAN, N.M., mayor
meditsinskoy sluzhby

Prescription charts for regimental medical stations. Voen.-
med.zhur. no.7:79 J1 '59. (MIRA 12:11)
(MEDICAL RECORDS)

SHEKHTMAN, P. A.

Petroleum Geology

Dissertation: "Principles of Prospecting for Useful Minerals." Dr Geol-Min Sci,
Moscow Geological Prospecting Inst, 24 Mar 54. (Vechernyaya Moskva Moscow, 14 Mar 54)

SO: SUM 213, 20 Sep 1954

Shakhmurov, A. A.

Andrei A. Shakhmurov; inspecting the Soviet Union. Dr.
Jedi-Rin, Central Asia Polytechnic Inst., Tashkent, 1950.
(22.001, 04.04)

CC: Shakhmurov, A. A. or 55

SHEKHTMAN, P.A.

KOROLEV, A.V., SHEKHTMAN, P.A.

[Postmagmatic ore deposits and their geological analysis]. Posle-
magmaticheskie rudnye tela i metody ikh geologicheskogo analiza.
Moskva, Gosgeoltekhizdat, 1954. 115 p. (MIRA 8:3D)

132-58-7-13/13

AUTHOR: Shekhtman, P.A.

TITLE: On the Publication of the Series "Methodical Suggestions for the Execution of Geological Prospecting Projects", Numbers III and IV (Gosgeoltekhizdat, 1957) (Po povodu vypuskov serii "Metodicheskiye ukazaniya po proizvodstvu geologorazvedochnykh rabot", vypuski III i IV) (Gosgeoltekhizdat, 1957)

PERIODICAL: Razvedka i okhrana nedr, 1958, Nr 7, pp 63-65 (USSR)

ABSTRACT: The author reviews the above mentioned series and finds that some chapters are not very well edited.

ASSOCIATION: Sredneaziatiskiy Politekhicheskiy Institut (The Central Asia Politechnical Institute)

1. Geology--USSR 2. Literature--USSR

Card 1/1

USCOMM-DC-55617

KOROLEV, A.V.; SHEKHTMAN, P.A.

Classification of post-magmatic ore fields. Zakonom. razm. polezn.
iskop. 2:136-146 '59. (MIRA 15:4)

1. Sredneaziatskiy politekhnicheskiy institut.
(Ore deposits--Classification)

RUSANOVA, Ol'ga Denisovna; SHEKHTMAN, Pavel Aleksandrovich; MURAKAYEVA, A.,
red.; MEL'NIKOV, A., tekhn. red.

[Structure of coal strata in Central Asia deposits] Stroenie plastov
uglia sredneaziatskikh mestorozhdenii. Tashkent, Gos. izd-vo Uzbek-
skoi SSR, 1960. 172 p. (MIRA 14:11)
(Soviet Central Asia--Coal geology)

BAYMUKHAMEDOV, Kh.N.; VOL'FSON, F.I.; ZAKIROV, T.Z.; KOROLEV, V.A.;
KREYTER, V.M.; KUSHNAREV, I.P.; LUKIN, L.I.; NEVSKIY, V.A.;
NIKIFOROV, N.A.; PEK, A.K.; RUSANOVA, O.D.; SONYUSHKIN, Ye.P.;
CHERNYSHEV, V.F.; SHEKHTMAN, P.A.

Aleksei Vasil'evich Korolev; obituary. Geol. rud. mestorozh.
no.4:134-135 JI-Ag '60. (MIRA 13:8)
(Korolev, Aleksei Vasil'evich, 1897-1960)

SHEKHTMAN, P.A.; LUK'YANOVA, Ye.N.

Methods of determining and analyzing specific expenditures in
prospecting for minerals. Uch.zap.SAIGIMS no.5:143-147 '61.
(MIRA 15:11)

(Prospecting)

VOL'FSON, F.I.; LUKIN, L.I.; NEVSKIY, V.A.; PEK, A.V.; SHEKHTMAN, F.A.

"Prospecting for mineral deposits" by V.M. Kreiter. Reviewed
by F.I. Vol'fson and others. Sov.geol. 4 no.12:133-137 D '61.
(MIRA 15:2)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii.

(Prospecting)

(Kreiter, V.M.)

SHEKHTMAN, P.A.

"Basic problems in and methods of studying ore zones and deposits"
by F.I. Vol'fson, L.I. Lukin. Reviewed by P.A. Shekhtman.
Izv.AN SSSR. Ser.geol.26 no.10:111-112 0 '61. (MIRA 14:9)
(Ore deposits) (Geology—Maps)
(Vol'fson, F.I.) (Lukin, L.I.)

SHERHTMAN, P.A.; POVAROV, A.V.; MARIPOV, T.M.

Morphological characteristics of ore bodies in the Kansay lead-zinc deposit and methods of prospecting for them. Geol.rud. mestorozh. no.4:113-122 J1-Ag '62. (MIRA 15:8)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent.

(Kansay region (Tajikistan)--Lead ores)

(Kansay region (Tajikistan)--Zinc ores)

SHEKHTMAN, P.A.

"Scale" of mineral deposits. Uch. zap. SAIGIMSa no.7:131-136 '62.
(MIRA 17:2)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent.

SHEKHTMAN, P.A.

Principles and methods of compiling detailed prognostic maps of
ore zones in postigneous deposits. Sov.geol. 5 no.2:37-49 F '62.
(MIRA 15:2)

1. Sredne-Aziatskiy nauchno-issledovatel'skiy institut geologii
i mineral'nogo syr'ya.

(Ore deposits—Maps)

SHEKHTMAN, P.A.; AYKHODZHAYEV, S.S.

Prospecting in the Kyzyl-Kiy coal deposit. Izv.vys.ucheb.zav.;
geol. i razv. 5 no.5:83-94 My '62. (MIRA 15:6)

1. Sredneaziatskiy politekhnicheskiy institut.
(Fergana--Coal geology)
(Prospecting)

SHEKHTMAN, P.A.

Using the principle of relative accuracy in prospecting methods.
Trudy SAIGIMSa no.3:3-92 '63. (MIRA 17:9)

LUK'YANOVA, Ye.N.; MARIPOV, T.M.; FOVAROV, A.V.; RABKOV, E.N.;
SHEKHTMAN, P.A.

Analysis of the prospecting methods of the Kansay lead-
zinc deposit. Trudy SAIGIMSa no.3:92-153 '63.

(MIRA 17:9)

SHEPSON, P.H.

Central Asian Conference on Methods and Economy in Geological
Prospecting. Sov. geol. 7 no.8:163-165 Ag '64. (MIRA 17:10)

KOROLEV, Aleksey Vasil'yevich; SHERATTMAN, Pavel Aleksandrovich;
VOL'PSOR, F.I., retsenzent; YERMAKOV, N.P., red.;
SMIRNOVA, Z.A., ved. red.

[Structural conditions governing the distribution of
postmagmatic ores] Strukturnye usloviia razmeshchenia
poslemagmatischenkikh rud. Moskva, Nedra, 1965. 506 p.
(MIRA 18:4)

KOROLEV, A.V. [deceased]; SHEKHITMAN, P.A.

Morphology of postmagmatic ore bodies. Trudy Sred.-Az.politokh.
inst. no.12:5-11 '61.

Conditions governing the distribution and geological types of
complex ore zones in Central Asia. Ibid.:12-22

(MIRA 18:12)

LUK'YANOVA, Ye.N.; MARIPOV, T.M.; KOROLEV, A.V.; RABKOV, K.N.; SHEKHTMAN, P.A.

Analyzing prospecting methods and the technical and economic indices of geological prospecting in the complex metal deposits of Central Kansay. Biul. nauch.-tekh. inform. VIMS no.2:3-7 '63. (MIRA 18:2)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent.

SHEKHTMAN, P.B.

Improving the methods of snow measurement observations adaptable
to local characteristics. Sbor. rab. Mosk. gidromet. obser. no.2:
85-105 '63 (MIRA 17:7)

SHEKHTMAN, P.B.

Probabilities of the spring climatic features of Kalinin Province.
Trudy GGO no.132:50-58 '62. (MIRA 15:8)
(Kalinin Province--Climate)

SHEKHTMAN, P.B.

Influence of a large city on the temperature and humidity of air
and precipitation. Trudy GGO no.88:48-58 '60.

(MIRA 13:8)

(Moscow--Meteorology--Observations)

SHEKHTMAN, P.B.

Comparing different methods of snow measurement observations.
Sbor. rab. Mosk. gidromet. obser. no. 1410-28 '60.
(MIRA 14:11)

(Snow surveys)

SHEKHTMAN, R.A.

Regarding the publication of the series "Metodicheskie ukazaniia
po proizvodstvu geologorazvedochnykh rabot," nos. 1 and 5
(Gosgeoltekhizdat, 1957). Razved. i okh. nedr. 24 no. 7: 63-64 J1 '58.
(MIRA 11:12)

1. Sredneaziatskiy politekhnicheskiy institut.
(Geology--Periodicals)

KAL'FA, S.F., prof.; ROZOVSKAYA, S.B., assistant; SHEKHMAN, A.B., ordinator

Role of diamox on the treatment of glaucoma. Oft. zhur. 16 no.5:
259-268 '61. (MIRA 14:10)

1. Iz kafedry glaznykh bolezney (zav. - prof. S.F.Kal'fa) Odesskogo
meditsinskogo instituta imeni N.I.Pirogova.
(GLAUCOMA) (DIAMOX)

DOBRYDEN', S.Ye.; SHEKHITMAN, V.B., agronom-inspektor

On the watch for state interests. Zashch. rast. ot vred. i bol.
2 no.6:52-53 N-D '57. (MIRA 16:1)

1. Nachal'nik Gosudarstvennoy inspektsii po karantinu rasteniy
po Odesskoy oblasti (for Dobryden').
(Odessa--Plant quarantine)

GAYDUK, S.N.; SHEKHTMAN, V.B.

Our practices in inspecting ships and cargoes. Zashch. rast.
ot vred. i bol. 4 no.5:44-45 S-O '59. (MIRA 16:1)

1. Karantinnye inspektory Odesskogo porta.
(Odessa--Plant quarantine)

SHEKHTMAN, S.L.

42640. Fiziologicheskiye Mekhanizmy Lechebnogo. Deystviya Massazha.
(Sravnitel'nyye Izmeneiya V Temperature, Electrosoprotivlenii Kozhi I Dvigatel'noy
Khronaksii Myshts Ot Ruchnogo I Apparatnogo Massazha). Byulleten' Eksperim.
Biologii I Meditsiny, 1948, No. 12, S 432-34.

SHEKHTMAN, V. Sh.

USSR/Chemistry - Metal corrosion

Card 1/2 : Pub. 147 - 16/27

Authors : Shekhtman, V. Sh.; Vedeneyeva, M. A.; and Zhuk, N. P.

Title : The kinetics of intercrystalline corrosion of Cr-Ni stainless steel

Periodical : Zhur. fiz. khim. 28/12, 2199-2210, Dec 1954

Abstract : Experiments were conducted to determine the kinetics of intercrystalline destruction (corrosion) of Cr-Ni stainless steel and to determine the effect of various factors (composition and concentration of corrosion medium, titanium content, cold deformation, temperature and period of annealing, etc.) on the corrosion resistance of the steel. The presence of Ti in the steel was found to reduce the rate of its intercrystalline corrosion. A Ti content exceeding that of C eliminates the intercrystalline corrosion in the steel. Cold deformation prior to brief annealing (5 - 10 min) at 650° C reduces the intercrystalline corrosion tendency of the steel. The data regarding the kinetics of intercrystalline corrosion of the tested steel are given in graphs.

Zhur. fiz. khim. 28/12, 2199-2210, Dec 1954

(Additional Card)

Card 2/2

Abstract : Eighteen references ; 10 USSR: 1 English; 1 German and 6 USA
(1930-1952). Tables; diagrams; drawings; illustrations.

Institution : The I. V. Stalin Steel Institute, Moscow

Submitted : April 28, 1954

18 (7), 24 (7)

AUTHORS: Ageyev, N. V., Shekhtman, V. Sh.

SOV/48-23-5-26/31

TITLE: X-ray Investigation of Alloys of Rhenium With Molybdenum
(Rentgenograficheskoye issledovaniye splavov reniya s
molibdenom)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23,
Nr 5, pp 650 - 651 (USSR)

ABSTRACT: In the introduction to the present paper the authors deal with the position of rhenium in the periodic system of elements, with the properties of its alloying combinations with a number of other elements, and with the metallic phases of such alloys. To determine the phases and the formation of alloys the authors of the present paper applied the X-ray phase analysis, making use of the K_{α} -Cu and K_{α} -Cr emission. Results are illustrated by a diagram (Fig 1). It is shown that the system Mo-Re consists of four monophasic ranges, i.e. two solid solutions with the bases Mo and Re, respectively, and two metallic compounds. The lattice parameters of the solid solutions are shown in a further diagram. The diagrams are discussed in general and also the Laue diagrams obtained in the course of investigation

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X-ray Investigation of Alloys of Rhenium With
Molybdenum

SOV/48-23-5-26/31

are dealt with briefly. To clarify the order of the α -phase of the system, the intensity of 13 primary lines was investigated numerically for the case of the disordered state, and results are given in table 1 for three different possible orders, one of which appears to be the most probable. Investigations are also carried out concerning the intermetallic compounds (χ -phase) exhibiting a cubic space lattice. In this connection, also metallographic methods are applied, and the electric resistance is determined. Results are compared with other alloys. There are 2 figures and 2 tables.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy of
Sciences, USSR)

Card 2/2

5(2,4)

AUTHORS:

Kopetskiy, Ch. V.; ~~Shekhtman, V. Sh.~~ SOV/20-125-1-22/67
Ageyev, H. V., Corresponding Member, AS USSR, Savitskiy, Ye. M.

TITLE:

Formation of the σ Phases in the Rhenium-manganese and
Rhenium-iron Systems (Obrazovaniye σ -faz v sistemakh
reniy-marganets i reniy-zhelezo)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 87-88
(USSR)

ABSTRACT:

Among the numerous known binary and ternary systems of transition metals σ phases are observed, i.e. compounds with an isomorphous structure of the β -U type. According to modern opinions the condition for the formation of the σ phase is as follows: if one of the components belongs to group VII or VIII of the periodic system the second component must be of group V A or VI A. However, the ϵ phase of the iron-rhenium system has also a crystal lattice of the σ phase (Refs 1, 2). Since the latter system does not correspond to the above-mentioned condition the σ phase cannot be explained within the framework of the existing theories (Refs 3, 4). The alloy produced by the authors showed a diffraction pattern confirming the data from reference 1 (Table 1). Lattice temperatures were:

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Formation of the σ Phases in the Rhenium-manganese
and Rhenium-iron System

SOV/20-125-1-22/67

$a = 9.92 \text{ \AA}$, $c = 4.69 \text{ \AA}$ and $c/a = 0.52$. Microhardness = 1234 kg/mm². Publications contain no data on the following production of the rhenium-manganese alloy. It may be seen from roentgenographic results that the annealed (for 360 hours in vacuum at 1000°) alloy is homogeneous and has a lattice of the σ phase. Parameter: $a = 9.14 \text{ \AA}$, $c = 4.75 \text{ \AA}$, $c/a = 0.52$ (Table 1). The σ phase forms from enamel (Fig 1). The observation of σ phases in the systems mentioned in the title leads to additional difficulties in the theoretical explanation of the conditions of formation of these compounds of transition metals. If these phases are regarded as a type of electron compounds (Ref 3), it strikes that rhenium similar to manganese shows an anomalous behavior as compared to metals of other groups. There are 1 figure, 1 table, and 4 references, 1 of which is Soviet.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences, USSR)

SUBMITTED: November 17, 1958
Card 2/2

KOPETSKIY, Ch.V.; SHENKHTMAN, V.Sh.; AGEYEV, N.V.; SAVITSKIY, Ye.M.

Formation of σ -phases in the systems rhenium - manganese and
rhenium - iron. Dokl.AN SSSR 125 no.1:87-88 Mr-Ap '59.
(MIRA 12:4)

1. Chlen-korrespondent AN SSSR (for Ageyev). Institut metallurgii
imeni A.A.Baykova AN SSSR.
(Rhenium alloys)

SOV/20-127-5-21/58
Shekhtman, V. Sh.

5(2,4)
AUTHORS: Ageyev, N. V., Corresponding Member, AS USSR, Shekhtman, V. Sh.

TITLE: Some Rules Governing the Formation of Compounds of Rhenium With Transition Metals

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5, pp 1011 - 1013 (USSR)

ABSTRACT: Rhenium tends to the formation of σ - and χ -phases in binary systems (Ref 1). These phases have related crystalline structures and are widespread in various binary and ternary systems of transition metals. The binary systems of rhenium are therefore suitable objects for investigating the nature of the latter. Proceeding from their properties it may be assumed that the tendency to the formation of χ -phases in the mentioned binary systems is widely determined by the atomic volume. The amount of the relative difference of the atomic radii may be computed for transition metals in the rhenium systems by using the data from table 2 according to formula:

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$$P = \frac{R_{Me} - R_{Re}}{R_{Re}} 100\%$$
 Figure 1 shows the dependence of P on

Some Rules Governing the Formation of Compounds of
Rhenium With Transition Metals

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the sub-group number of the element in D. I. Mendeleev's periodic system in a diagram. In this diagram those metals are given which according to the data from publications (Refs 8 - 14) enter into compounds with rhenium. From these diagrams it may be seen that the χ -phase is formed only with those metals of the sub-groups 1VA, VA, and VI A which have a positive P, i. e. a longer atomic radius than rhenium: Ti, Zr, Nb, Ta, Mo and W. Metals of the same groups with a smaller atomic radius than that of Re (i. e. V and Cr) do not form this phase. It would be incorrect to maintain that the existence and the stability of the χ -phases is determined merely by P. Also the effect of electronic concentration must be taken into account. In several systems the σ -phases exist together with the χ -phases. This makes possible the observation of a certain connection between these compounds. Due to this fact it may be pointed out that if P is near to 5%, i. e. to a value which characterizes the difference of the interatomic distances in the α -Mn-unit cell (Table 1) the tendency to the formation of σ -phases decreases, whereas the tendency to the formation of the χ -phases increases. In this connection

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Some Rules Governing the Formation of Compounds of
Rhenium With Transition Metals

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the authors make the following remarks concerning the nature of the χ -phases: in the mentioned formation of the χ -phases in binary systems of rhenium with certain metals the double nature of the two mentioned phases becomes manifest. They are compounds the existence and stability of which is determined to the same degree by P and by the rule of the electron concentration. The agreement of the chemical composition of the χ -phases with a certain structural formula connected with the atomic radius of the components indicates the similarity with the Laves phases. At the same time the χ -phases have some characteristics similar to those of the σ -phases; their existence is however, widely connected with the electron concentration. Thus the χ -phases occupy an intermediate position between the Laves and the σ -phases. There are 1 figure, 2 tables, and 17 references, 11 of which are Soviet.

ASSOCIATION:

Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences, USSR)

SUBMITTED:

April 20, 1959

Card 3/3

5-2

18.1200

66456

AUTHORS: Ageyev, N. V., Corresponding Member, AS USSR, SOV/20-129-3-24/70
Kopetskiy, Ch. V., Savitskiy, Ye. M.,
Shekhtman, V. Sh.

TITLE: On the Interaction of the Elements of the VIIA Subgroup With
Transition Metals

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 3, pp 559 - 562
(USSR)

ABSTRACT: Mn is known to be an anomalous metal with regard to combining
forces between the atoms, the crystalline structure, etc.
(Refs 1,2). Active interaction with the elements of the sub-
groups IVA, VA, and VIA is typical of rhenium. In connection
herewith, σ - and χ -phases are formed in binary systems
(Refs 3,4). Mn and Re are analogous with regard to the forma-
tion of oxides, acids, etc. It is, however, unknown whether
they are analogous with regard to interaction with metals.
Table 1 shows distinct differences of the physical properties
of Mn, Re, and Tc. Great similarity of Mn and Re as to the for-
mation of metallic phases can be seen in analyzing the interac-
tion of Mn and Re with transition metals. Figure 1 shows the de-
pendence of the value of the dimension factor (razmernyy faktor) P

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66456

On the Interaction of the Elements of the VIIA Subgroup SOV/20-129-3-24/70
With Transition Metals

(with regard to Mn and Re) on the group number of the periodic system for all transition metals (Ref 6). Figure 1 shows the compounds formed with a corresponding transition metal in a binary system of Mn or Re. Mn and Re and the above elements of the subgroups IVA and VA form Laves phases with a structure of the type $MgZn_2$ and $MgNi_2$ ($ZrRe_2, ZrMn_2, TiMn_2, TaMn_2, NbMn_2$). All these compounds are formed from the liquid phase and are stable up to room temperature. It may be concluded therefrom that there exists great similarity between Mn and Re in the formation of alloys with transition metals. This is proved, above all, by the type of interaction with elements which are at right and at the left of group VII in the periodic system. Compounds are formed with the metals of the subgroups IVA, VA, and VIA. Solid solutions on the basis of more simple structures or compounds with a simple structure, however, are formed with metals of group VIII. In binary systems, Mn and Re form the same type of phases with the metals of the titanium-, vanadium-, and chromium group. Mn and Re show a great tendency towards formation of σ -phases. The structure corresponding to the low-temperature

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86392

S/020/60/135/002/016/036
B016/B052

18.7500

AUTHORS: Ageyev, N. V., Corresponding Member of the AS USSR and
Shekhtman, V. Sh.

TITLE: The Nature of Sigma Phases

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 2,
pp. 309-311

TEXT: The authors investigated the order of sigma phases in the systems Cr-Re, Mn-Re, and Re-Fe. They studied annealed binary alloys with 37 at% Cr (the sample was obtained from Professor Ye. M. Savitskiy's laboratory), 47.7 at% Mn, and 55 at% Fe. According to microstructural and X-ray analyses, these alloys belong to the single-phase regions of σ -phases in the state diagram. Accordingly, formulas were chosen for the calculation of structural amplitudes which, on the basis of crystallochemical data, are ascribed to these compounds with all reservations: $\text{Re}_{18}\text{Cr}_{12}$, $\text{Re}_{16}\text{Mn}_{14}$, $\text{Re}_{12}\text{Fe}_{18}$. Table 1 shows the variants of ordered atomic distribution in the

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The Nature of Sigma Phases

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compounds concerned. These variants follow the symmetry of space group $P4_2/mnm$ to which the structure of σ -phases belongs. The authors'

calculations showed that in most cases a distinction between statistical and ordered distributions of atoms is possible on the basis of the interrelations of chosen lines. However, in the case of the Re-Fe alloy, it was also necessary to study lines (311) and (002). Their intensities were determined by a YPC-50M (URS-50I) diffractometer with an MCTP-4 (MSTR-4) counter. The curves were recorded by an ЭПН-09 (EPP-09) potentiometer. A comparison between experiment and calculation shows that the above-mentioned alloys are ordered. The atomic distribution in the cells of σ -phases is correlated to a coordination number and depends on the position of the components in the periodic system. The diagram of Fig. 1 shows the average concentration of Re in the σ -phases of V-Re, Cr-Re, Mn-Re, and Fe-Re (Refs. 13-15) as a function of the group number of the second component. It was thus found that the Re content decreases with increasing group numbers. Their explanation of this phenomenon is in accordance with the opinion of other researchers; they arrive at the conclusion that in the four last-mentioned systems, rhenium has an

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The Nature of Sigma Phases

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electron excess as compared to the hypothetical level. The higher the valency of the second component, the smaller the Re amount necessary for an electron concentration characteristic of σ -phases. It is assumed that the formation of σ -phases in the systems Re-Mn and Re-Fe can be explained by a higher metal valency of Re as compared to the elements of the first transition group, although these σ -phases do not follow the well-known rule according to which the elements forming σ -phases lie on both sides of the dividing line between the sub-groups VI A and VII A. There are 1 figure, 2 tables, and 15 references: 6 Soviet, 4 US, 4 British, and 1 Polish.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy
of Sciences USSR)

SUBMITTED: August 3, 1960

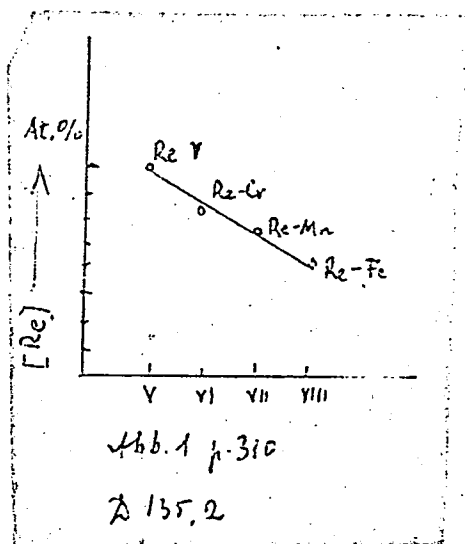
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The Nature of Sigma Phases

Text to Fig. 1: Re content of the σ -phase as a function of the group number of the second period.

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связанной
периодиче-
езультаты,
оединений
ванадием,
ом могут
представ-
их метал-

Re, Cr -

Re ₁₁ Cr ₁₁			Re ₁₁ Mn ₁₁						Re ₁₁ Fe ₁₁			
2	3	4	1	2	3	4	5	6*	1	2	3*	4
Re	2 Re	2 Cr	2 Mn	2 Mn	2 Mn	2 Re	2 Mn	2 Mn	2 Fe	2 Fe	2 Fe	2 Re
Re	4 Cr	4 Re	4 Mn	4 Re	4 Mn	4 Mn	4 Re	4 Re	4 Fe	4 Fe	4 Re	4 Fe
Re	6 Re	6 Re	6 Re	6 Re	6 Re	6 Re	6 Re	6 Re	6 Fe	6 Fe	6 Re	6 Re
Re	8 Re	8 Re	8 Re	8 Re	8 Re	8 Re	8 Re	8 Re	8 Fe	8 Fe	8 Re	8 Re
Re	10 Re	10 Re	10 Re	10 Re	10 Re	10 Re	10 Re	10 Re	10 Fe	10 Fe	10 Re	10 Re
Re	12 Re	12 Re	12 Re	12 Re	12 Re	12 Re	12 Re	12 Re	12 Fe	12 Fe	12 Re	12 Re
Re	14 Re	14 Re	14 Re	14 Re	14 Re	14 Re	14 Re	14 Re	14 Fe	14 Fe	14 Re	14 Re
Re	16 Re	16 Re	16 Re	16 Re	16 Re	16 Re	16 Re	16 Re	16 Fe	16 Fe	16 Re	16 Re
Re	18 Re	18 Re	18 Re	18 Re	18 Re	18 Re	18 Re	18 Re	18 Fe	18 Fe	18 Re	18 Re
Re	20 Re	20 Re	20 Re	20 Re	20 Re	20 Re	20 Re	20 Re	20 Fe	20 Fe	20 Re	20 Re
Re	22 Re	22 Re	22 Re	22 Re	22 Re	22 Re	22 Re	22 Re	22 Fe	22 Fe	22 Re	22 Re
Re	24 Re	24 Re	24 Re	24 Re	24 Re	24 Re	24 Re	24 Re	24 Fe	24 Fe	24 Re	24 Re
Re	26 Re	26 Re	26 Re	26 Re	26 Re	26 Re	26 Re	26 Re	26 Fe	26 Fe	26 Re	26 Re
Re	28 Re	28 Re	28 Re	28 Re	28 Re	28 Re	28 Re	28 Re	28 Fe	28 Fe	28 Re	28 Re
Re	30 Re	30 Re	30 Re	30 Re	30 Re	30 Re	30 Re	30 Re	30 Fe	30 Fe	30 Re	30 Re
Re	32 Re	32 Re	32 Re	32 Re	32 Re	32 Re	32 Re	32 Re	32 Fe	32 Fe	32 Re	32 Re
Re	34 Re	34 Re	34 Re	34 Re	34 Re	34 Re	34 Re	34 Re	34 Fe	34 Fe	34 Re	34 Re
Re	36 Re	36 Re	36 Re	36 Re	36 Re	36 Re	36 Re	36 Re	36 Fe	36 Fe	36 Re	36 Re
Re	38 Re	38 Re	38 Re	38 Re	38 Re	38 Re	38 Re	38 Re	38 Fe	38 Fe	38 Re	38 Re
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Re	50 Re	50 Re	50 Re	50 Re	50 Re	50 Re	50 Re	50 Re	50 Fe	50 Fe	50 Re	50 Re
Re	52 Re	52 Re	52 Re	52 Re	52 Re	52 Re	52 Re	52 Re	52 Fe	52 Fe	52 Re	52 Re
Re	54 Re	54 Re	54 Re	54 Re	54 Re	54 Re	54 Re	54 Re	54 Fe	54 Fe	54 Re	54 Re
Re	56 Re	56 Re	56 Re	56 Re	56 Re	56 Re	56 Re	56 Re	56 Fe	56 Fe	56 Re	56 Re
Re	58 Re	58 Re	58 Re	58 Re	58 Re	58 Re	58 Re	58 Re	58 Fe	58 Fe	58 Re	58 Re
Re	60 Re	60 Re	60 Re	60 Re	60 Re	60 Re	60 Re	60 Re	60 Fe	60 Fe	60 Re	60 Re
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Re	64 Re	64 Re	64 Re	64 Re	64 Re	64 Re	64 Re	64 Re	64 Fe	64 Fe	64 Re	64 Re
Re	66 Re	66 Re	66 Re	66 Re	66 Re	66 Re	66 Re	66 Re	66 Fe	66 Fe	66 Re	66 Re
Re	68 Re	68 Re	68 Re	68 Re	68 Re	68 Re	68 Re	68 Re	68 Fe	68 Fe	68 Re	68 Re
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Re	74 Re	74 Re	74 Re	74 Re	74 Re	74 Re	74 Re	74 Re	74 Fe	74 Fe	74 Re	74 Re
Re	76 Re	76 Re	76 Re	76 Re	76 Re	76 Re	76 Re	76 Re	76 Fe	76 Fe	76 Re	76 Re
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Re	80 Re	80 Re	80 Re	80 Re	80 Re	80 Re	80 Re	80 Re	80 Fe	80 Fe	80 Re	80 Re
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Re	94 Re	94 Re	94 Re	94 Re	94 Re	94 Re	94 Re	94 Re	94 Fe	94 Fe	94 Re	94 Re
Re	96 Re	96 Re	96 Re	96 Re	96 Re	96 Re	96 Re	96 Re	96 Fe	96 Fe	96 Re	96 Re
Re	98 Re	98 Re	98 Re	98 Re	98 Re	98 Re	98 Re	98 Re	98 Fe	98 Fe	98 Re	98 Re
Re	100 Re	100 Re	100 Re	100 Re	100 Re	100 Re	100 Re	100 Re	100 Fe	100 Fe	100 Re	100 Re

Tab. 1

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2135,2

X

Text to Table 1: 1 - Position; 2 - coordination number.

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AGAYEV, N. V., and SHEKHTMAN, V. Sh.

"The Crystal Chemistry of the Compounds of Rhenium and Transition Metals."

report presented at the 117th Meeting of the Electrochemical Society, Chicago, Ill. 1-5 May 1960.

The compounds in the systems Re-Mo, Re-Mn, Re-Fe, et al. have been studied. The single crystals of the β phase Re-Mo are received, from which the crystal-class symmetry and the dimensions of unit cell have been determined by X-ray method. The experimental study of the structure of two compounds in the Re-Mn and Re-Fe Systems has been carried out. It is found that both these compounds have a structure isomorphous to well known phases. The conditions of formation of α and β phases in binary systems of rhenium with transition metals are analyzed. It is shown that formation of α phases is determined mostly by the ratio of the atomic radii of rhenium and the second component. The experimental data concerning the ordering of the atoms in the cells α phases and β phases in many binary systems on the base of rheniums are received.

SHEKHTMAN, V. Sh. and AGEYEV, N. V.

The Crystal Chemistry of the Compounds of
Rhenium with Transition Metals

N. V. Ageev and V. Sh. Shehtman, Academy of Science, Moscow

The compounds in the systems Re-Mo, Re-Mn, Re-Fe, et al, have been studied. The single crystals of the δ -phase Re-Mo are received, from which the crystal-class symmetry and the dimensions of unit cell have been determined by x-ray method. The experimental study of the structure of two compounds in the Re-Mn and Re-Fe systems has been carried out. It is found that both these compounds have a structure isomorphous to well-known δ -phases. The conditions of formation of δ - and α -phases in binary systems of rhenium with transition metals are analyzed. It is shown that the formation of α -phases is determined mostly by the relation of the atomic radii of rhenium and the second component. The experimental data concerning the ordering of the atoms in the cells δ -phases and α -phases in many binary systems on the base of rhenium are received.

Report presented at the 117th Meeting of the Electrochemical Society, Chicago, 1-5 May 1960.

S/020/62/143/004/024/027
B101/B138

18-1775

AUTHORS: Ageyev, N. V., Corresponding Member AS USSR, and Shekhtman, V. Sh.

TITLE: Ordering of a solid solution on α -Mn base

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 4, 1962, 922-924

TEXT: The ordering of the single-phase alloy containing 20% by weight (6.9 at. %) rhenium and 80% manganese, which almost corresponds to the maximum solubility of Re in α -Mn, was investigated by Debye patterns. The following atom distributions were examined:

Distribution of the atoms

P	C	IA	S	I	II	III
2(a)	162.74			4Re+6Mn	2Re	2Mn
8(c)	162.75		4Re+54Mn	24Mn	2Re+6Mn	4Re+4Mn
24(g)	132.64			24Mn	24Mn	24Mn
24(g')	122.57			24Mn	24Mn	24Mn

Legend: P = position;
C = coordination number;
IA = mean interatomic distance, Å; S = statistical distribution.

The calculation of structural amplitudes for $R_{\text{Re}} = 1.37$ and $R_{\text{Mn}} = 1.30$,

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Ordering of a solid solution...

based on equations available for the $I\bar{4}3m$ space group, showed that the ordering of the alloy could be evaluated by the intensities of the lines (321), (400), (411, 330), (332), (422), (431, 510). Samples produced in an HF furnace and annealed at 750, 800, and 950°C, were examined in the cast state, together with electrolytic Mn for a reference. Results: (1) The line intensity in the α -Mn Debye pattern agrees well with calculations for the case of disordered distribution. (2) The line intensities do not differ for cast and annealed samples. Heat treatment, therefore, does not modify the atom distribution. (3) Re atoms in the solid solution are partially in positions (a) and (c), without preferred occupation of either, i. e., there is a tendency toward ordered distribution corresponding to variant I. This is indicated by the intensifying of line (321) until it is almost as intense as (400), and by the approximately equal intensity of lines (422) and (431, 510), while line (332) fades slightly. (4) Only part of the Re atoms occupy positions corresponding to the maximum coordination number. About 2 Re atoms each settle in positions (a) and (c). The tendency of the larger Re atoms to occupy positions corresponding to the largest interatomic distances confirms the relationship between the formation of phases with α -Mn structure and the scale factor. There are 1

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Ordering of a solid solution...

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figure and 2 tables.

SUBMITTED: November 29, 1961

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S/020/62/143/005/010/018
B145/B138

12 12
AUTHORS: Ageyev, N. V. Corresponding Member AS USSR, and Shekhtman, V. Sh.

TITLE: A new compound in the system rhenium - iron

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 5, 1962, 1091-1093

TEXT: Re - Fe alloys with 40, 50 and 60% by weight of Re were investigated metallographically and by X-ray diffraction analysis. Carbonyl iron and carbonyl rhenium (99.9%) were used as starting materials. The samples were annealed at 750, 800, 950, and 1050°C and quenched from 1200 and 1300°C. Powder patterns were taken in CoK α radiation without filter, in an FKK (RKD) camera. The patterns from specimens quenched from 1200 and 1300°C or annealed at 1050°C showed two systems of lines corresponding to the solid solution γ Fe - σ phase. At lower annealing temperatures, the σ phase lines disappeared, and, besides lines of the α (750 and 800°C)- and γ (950°C) solid solution, reflections of a new phase (γ' phase) appeared. According to the X-ray pattern the alloy with 60% Re is very close to the single-phase region of the new compound. The lines of the γ' phase fit in on the assumption of a cubic body-centered lattice. 8.960 kX was ob-

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A new compound in the...

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B145/B138

tained for the a parameter of the unit cell (platinum standard). From this, z, the number of atoms per unit cell is calculated as 58.1, using density (12.92 g/cm^3). The X-ray pattern of the γ' phase is very similar to that of α -manganese ($z = 58$). Differences in intensity are due to the ordered distribution of Re and Fe in the γ' phase. Proceeding from the distribution 2(a): 2 Re, 8(c): 8 Re, 24(g): 8 Re, 16 Fe, 24(g'): 24 Fe, the line intensities of the γ' phase were calculated by means of the equation $I \propto Lp|F|^2$ ($L = 1 + \cos^2 2\theta / \sin^2 2\theta \cdot \cos \theta$, p = repetition factor, $|F|$ = modulus of the structure amplitude), and agreed well with the measurements. This means that the new compound has a structure of the α -manganese type with ordered distribution of the atoms in the unit cell. Compounds of the same structural type might exist in all systems with metals of the IVA, VA and VIA subgroup (except Cr and V). There are 1 figure and 2 tables.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy imeni A. A. Baykov)

SUBMITTED: November 29, 1961
Card 2/2

AGEYEV, N.V.; SHEKHTMAN, V.Sh.

Ordering of solid solution based on α -Mn. Dokl. AN SSSR 143
no.4:922-924 Ap '62. (MIRA 15:3)

1. Chlen-korrespondent AN SSSR (for Ageyev).
(Solutions, Solid) (Manganese-rhenium alloys)

TYLKINA, M.A.; POLYAKOVA, V.P.; SHEKHITMAN, V.Sh.

System iridium - tungsten. Zhur. neorg. khim. 8 no.11:2549--
2555 N '63. (MIRA 17:1)

L 23617-65 EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD/JG/MLK
ACCESSION NR: AT5002776 S/0000/64/000/000/0176/0179

AUTHOR: Shekhtman, V. Sh.

TITLE: X-ray structural study of the alloys of rhenum²⁷ with manganese²⁷ and iron²⁷

SOURCE: Vsesoyuznoye soveshchaniye po probleme reniya. 2d, Moscow, 1962. Reniy (Rhenium); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 176-179

TOPIC TAGS: rhenium, rhenium alloy, rhenium alloy microstructure, xray structural analysis, manganese alloy, cast rhenium alloy, iron alloy

ABSTRACT: The author studied the alloy of Mn + 6.6 at. % Re (corresponding to the maximum solubility of rhenium in the low-temperature modification of manganese) in the cast state and after annealing at 750, 800, and 950C. The x-ray patterns were recorded with an RKD camera. Comparison of the patterns showed a difference in the intensities of the various reflections of the alloy and of α -manganese, indicating an ordered arrangement of the atoms in the alloy. The distribution of the rhenium and manganese atoms in the structure of the solid solution was investigated, and structural amplitudes were calculated. The intensities of six lines selected on the basis of these calculations were measured, and the values were compared with calculated data. The

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ACCESSION NR: AT5002776

existence of a compound with an α -Mn structure in the rhenium - iron system constitutes additional evidence in favor of the tendency of rhenium to form complex crystal structures similar to those formed by its analog, manganese. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 05Aug64

ENCL: 00

SUB CODE: MM, OP

NO REF SOV: 008

OTHER: 000

Card 2/2

AUTHOR: v.Ya. Shekhtman, Engineer

94-4-15/25

TITLE: On the Erection of flameproof Electric Wiring (K voprosu
montazha vzryvobezopasnykh elektroprovodok)

PERIODICAL: Promyshlennaya Energetika, 1958, vol.13, No.4,
pp. 28 - 29 (USSR)

ABSTRACT: At present, different instructions exist about the insulation of flameproof wiring in steel conduits. Several instances are given of ways in which these instructions contradict one another; for example, one set of rules forbids pouring hot compound and another insists upon it. One type of recommended lock-nut is quite unpractical and a better method of making gas-type joints between conduits is illustrated. An improved design of fitting to save labour and reduce the number of joints is described and illustrated. There is insufficient range of fittings for flameproof wiring installations. There are 3 figures.

AVAILABLE: Library of Congress
Card 1/1

PHASE I BOOK EXPLOITATION

SOV/5531

Yagubets, Aleksandr Nikolayevich, and Viktor Yakovlevich Shekhtman, Engineers

Pribory i elementy sistem avtomaticheskogo kontrolya i regulirovaniya proizvodstvennykh protsessov; spravochnoye posobiye (Devices and Components of Automatic Control and Regulation Systems in Industrial Processes; Information Manual) [Kemerovo] Kemerovskoye knizhnoye izd-vo, 1960. 367 p. 10,000 copies printed.

Ed.: G. Manchenko; Tech. Ed.: G. Rudina.

PURPOSE: This manual is intended for assembly workers, technical personnel concerned with the operation of automated systems, technicians in checking- and measuring-device shops and in plant laboratories, and the personnel of design offices, as well as for students in related courses.

COVERAGE: The authors have based their manual on instructions for assembly and operation and on catalogues of instrument-building plants. The first six chapters describe automatic-control and regulation systems, while the seventh gives in brief the necessary information on the mounting of electrical and tubular wiring in automatic-control, regulation, and remote-control circuits.

Card 1/10

YAGUBETS, Aleksandr Nikolayevich, inzh.; ~~SHEKHTMAN, Viktor Yakovlevich,~~
inzh.; MANCHENKO, G., red.; RUDINA, G., tekhn.red.

[Devices and elements of systems for the automatic control and
regulation of industrial processes; reference manual] Pribory
i elementy sistem avtomaticheskogo kontrolya i regulirovaniya
proizvodstvennykh protsessov; spravochnoe posobie. Kemerovo,
Kemerovskoe knizhnoe izd-vo, 1960. 367 p.

(MIRA 14:4)

(Automatic control) (Electronic apparatus and appliances)

SHEKHTMAN, V. Ya., inzh.; DUKHAN, B. S., inzh.

Remote control of welding transformer currents. Svar. proizv.
no.10:31-32 0 '62. (MIRA 15:10)

1. Vsesoyuznyy institut po proyektirovaniyu organizatsiy
energeticheskogo stroitel'stva.

(Electric welding—Equipment and supplies)
(Remote control)

SHEKHTMAN, Ya. I.

Intrasternal blood transfusion therapy of psoriasis. Vest. ven. i derm. no. 4:
62 J1-Ag '53. (MLBA 6:9)

(Skin--Diseases) (Blood--Transfusion)

SHEKHTMAN, Ya.I., mayor med.sluzhby

Some data on the treatment of skin diseases with L-2 Lesovaia solution.
Voen.-med.zhur. no.11:72-73 N '57. (MIRA 11:4)
(SKIN--DISEASES)

SHENKELSON, Ya.I.

Problem of preventing epidermophytosis. Vest.derm. i ven. 33
no.3:79 My-Je '59. (MIRA 12:9)

(DERMATOMYCOSIS)

3

CA - SHEKHITMAN, L. V.

Decolorization of methylene blue under the action of x-rays. Ya. L. Shekhitman, A. A. Krasnovskii, and I. V. Vereshchinskii (A. N. Bach Biochem. Inst. Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 74, 1079 (1980). The decolorization of aq. solns. of methylene blue, 20-170 micromoles in 0.1 N H₂SO₄, was investigated as a function of the dose of x-rays, up to 10,000 rontgens. At the latter dose, the yields of the decolorization reaction were from 0.147 to 0.57 micromole l. per 1000 rontgens, which corresponds to 0.054-0.21 mols. per ion pair. Plots of the fall of the absorption coeff. in 660 mμ are nearly linear, and practically parallel for the different initial concns. Treatment of the reaction vessel with CrO₃, followed by rinsing with H₂O, increases the decolorization at equal doses. Addn. of quinone, hydroquinone, glucose, or glycerol blocks the decolorization; this blocking effect first increases almost linearly with the log of the amt. added, then levels off. Exposure to x-rays results primarily in a decompn. of the solvent, giving rise to free radicals and ions which, in turn, react with the dissolved dye. The blocking effect of the org. substances is due to their interaction with the primary radicals and ions. N. Thon

Lab. of Radiation and Isotopes, above Inst.

~~XXXXXXXXXXXXXXXXXXXX~~
SHEKHTMAN A. L., LUKINA E. M.

O vliianii obshchei kontsentratsii proiavliaiushchego rastvora
na kachestvo fliuorograficheskogo izobrazhenia. /Effect of the
general concentration of the developer on the quality of the
fluorographic picture/ Prob. tuberk., Moskva No. 2 Mar-Apr 51
p. 74-6.

1. Prof. Shekhtman; Engineer Lukina. 2. Of the Fluorographic
Sector (Head--Prof. A. L. Shekhtman), Moscow Municipal Scien-
tific-Research Tuberculosis Institute (Director--Prof. V. L.
Synis).

GERL Vol. 20, No. 10 Oct 1951

MEDVEDEVA, G.A.; MEYSEL, M.N.; SHEKHTMAN, Ya.L.

Application of single dose high intensity irradiation of short duration
in the study of dynamics of radiological effect. Zh. obsh. biol.,
Moskva 13 no. 3:243-245 May-June 1952. (GLML 22:4)

1. Laboratory of Radiation and Isotopes of the Division of Biological
Sciences of the Academy of Sciences USSR and the Institute of Microbiology
of the Academy of Sciences USSR. (Submitted 1951)

USSR/General Biology - Physical and Chemical Biology

B-1

Abs Jour : Ref Zhur - Biol., No 3, 1958, No 9416

Author : Shekhtman, Ya. L.

Inst : Not Given

Title : "Time Factor" in the Theory of Biological Action of Radiation

Orig Pub : Tr. In-ta biol. fiz. AN SSSR, 1955, 1, 99-121

Abstract : The course of radiobiological reactions (RR) was studied under differing conditions of modulation intensity and timing of irradiation. A differential equation was set up, describing the course of RR as to time; a solution was given for this equation for different conditions of irradiation; individual cases for application of these solutions were noted. In experiments on 48-hour wheat germinations subjected to short-time impulse and long-time x-ray radiation in various doses, the effects were measured by root lengths, and results were obtained which agree well with theoretical deductions. Noting the very approximate nature of mathematical interpretation of

Card : 1/2

SHEKHTMAN, Ya.L.

Radiation dosimetry. Trudy Inst.biol.fiz. no.1:122-135 '55.

(RADIOLOGY)

(MLRA 9:9)

SHEKHTMAN, YA. L.

USSR/ Physics - Biophysics

Card 1/1 Pub. 22 - 19/47

Authors : Radzievskiy, G. B. and Shekhtman, Ya. L.

Title : On application of the roentgeno-structural analysis to the studying of ice formation in plant grains

Periodical : Dok. AN SSSR 101/6, 1051 - 1053, Apr. 21, 1955

Abstract : A description is given of the x-ray equipment used in experiments in the study of the formation of ice in plant grains (wheat). Eight references: 3 USSR, 2 Germ., 2 Brit., and 1 USA (1921-1951). Diagrams; graph; table; and illustrations.

Institution :

Presented by: Academician A. I. Oparin, December 27, 1954

SHEKHTMAN, YA. L.

USSR/Biology - Bio-physics

Card 1/1 Pub. 22 - 24/62

Authors : Shekhtman, Ya. L.

Title : On the direct and indirect effects of ionizing radiation on biological subjects

Periodical : Dok. AN SSSR 102/3, 511 - 514, May 21, 1955

Abstract : An experimental study of how low-temperature oxygen influenced the radiobiological effect on wheat seeds and sprouts is described. Nine references: 3 USA, 3 Germ., 2 USSR, and 1 Brit. (1941-1953). Diagram; graphs.

Institution : The Acad. of Sc., USSR, Institute of Bio-physics

Presented by: Academician V. A. Engel'gard, February 28, 1955

COL. TYPE : USSR
 CATEGORY : General Biology.
 : Physical and Chemical Biology.
 ADJ. SOURCE : RZhBiol., No. 3, 1959, No. 9556
 : Shokhtman, Ya. I.
 A. USSR : AS USSR
 T. I. : Deviations from the Law of Interchange in
 Title : Radiobiology.
 ORG. SOURCE : Sb. posvyashch. pamyati akad. F. P. Lavrenko,
 : M., RSFSR, 1956, 332-340
 ABSTRACT : The author proceeds from the concept of the
 : existence of diametrically opposed processes
 : in radioactivity affecting biological objects;
 : a) decay and deactivation processes of biologi-
 : cally active substances, and b) processes in
 : which decay products are discharged and prima-
 : ry products restored. A mathematical analysis
 : of deviations from the law of interchange in
 : radiobiology is presented; also, the ex-
 : tent character of the biological effect of

Q. AB:

1/2

SHEKHTMAN, Ya. L.

The Time Factor in the Theory of Biological Activity of Radiation
Trudy Instituta Biologicheskoy Fiziki, No 1, 1956
S916, 5 Mar 1956, p48

SHEKHTMAN, Ya.L.; RADZIYEVSKIY, G.B.

Measuring doses in roentgens from highly intensive radiation and at short distances from the source. Biofizika 1 no.1:60-67 '56.

(MLRA 9:12)

1. Institut biologicheskoy fiziki Akademii nauk SSSR, Moskva.
(RADIATION--MEASUREMENT)